

Appl. No. 10/733,984  
Examiner: MONDT, JOHANNES P, Art Unit 2826  
In response to the Office Action dated July 13, 2005

Date: September 27, 2005  
Attorney Docket No. 10113311

## REMARKS

Applicant thanks the Examiner for acknowledging Applicant's claim to foreign priority and receipt of the certified copy of the priority document. Responsive to the Office Action mailed on July 13, 2005 in the above-referenced application, Applicant respectfully requests amendment of the above-identified application in the manner identified above and that the patent be granted in view of the arguments presented. No new matter has been added by this amendment.

### Present Status of Application

Claims 23-26 are objected to for informalities. Claim 23 is rejected under 35 U.S.C. 102(b) as being anticipated by Murai (U.S. Patent No. 5,410,183). Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murai in view of Wu et al (5,786,250). Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murai in view of Yeh (6,100,569). Claim 26 would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

In this paper, claims 23-26 are amended according to the suggestion of the Examiner to overcome the objections. Claim 23 is further amended to recite that the contact plug is contacted with the inner landing pad. Support for this amendment can be found on page 8, line 10 to page 9, line 2 and Fig 11 of the application. The Summary is amended to correspond to amended claim 23. New claim 27 is added, as described in further detail below. Claims 1-22 are canceled.

Reconsideration of this application is respectfully requested in light of the amendments and the remarks contained below.

### Allowable Subject Matter

Applicant thanks the Examiner for his indication in the Office Action that claim 26 would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

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Rejections Under 35 U.S.C. 102(b)

Claim 23 is rejected under 35 U.S.C. 102(b) as being anticipated by Murai. To the extent that the grounds of the rejections may be applied to the claims now pending in this application, they are respectfully traversed.

As amended, claim 23 recites a structure for a bit line contact hole, comprising a substrate, a transistor, disposed on the substrate, comprising a gate layer covered by a first insulating layer and comprising a doped region, an inner landing pad, disposed on the doped region and parts of the transistor, comprising a polysilicon layer, a passivation layer, disposed on the inner landing pad, the transistor, and the substrate, a second insulating layer, disposed on the passivation layer, having a flat surface on the passivation layer, a contact plug, disposed on the second insulating layer and the passivation layer **and contacted with the inner landing pad**, electrically connecting with the inner landing pad, and an interconnected landing pad, deposited on the contact plug.

Murai discloses a contact structure of a semiconductor device and method of manufacturing the same. Specifically, with reference to Fig. 1E and col. 5, lines 39-41 of Murai, an inner portion 9 of the metal wiring film is connected with the polysilicon film 5 at the through hole 12.

Murai does not teach or suggest a structure for a bit line contact hole comprising a contact plug, disposed on the second insulating layer and the passivation layer and contacted with the inner landing pad, electrically connecting with the inner landing pad, as recited in claim 23.

To anticipate a claim, a reference must teach every element of the claim. In this regard, the Federal Circuit has held:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

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"The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

In the Office Action, the Examiner relies upon the horizontal bottom portion of polysilicon film 5 to teach the landing pad of claim 23. Applicant further relies upon inner portion 9 of metal wiring film 8 to teach the contact plug of claim 23.

As clearly shown in Fig. 1E, Murai teaches that an inner portion 9 of the metal wiring film 8 is connected with the polysilicon film 5 at the through hole 12. However, the horizontal bottom portion of the polysilicon film 5, which the Examiner views as the inner landing pad, is not **contacted with** the inner portion 9, as recited in claim 23.

For at least the reasons described above, it is Applicant's belief that Murai fails to teach or suggest all the limitations of claim 23. Applicant therefore respectfully requests that the rejection of claim 23 be withdrawn and the claim passed to issue. Insofar as claims 24-26 depend from claim 23 either directly or indirectly, and therefore incorporate all of the limitations of claim 23, it is Applicant's belief that these claims are also in condition for allowance.

#### Rejections Under 35 U.S.C. 103(a)

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murai in view of Wu et al. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murai in view of Yeh. To the extent that the grounds of the rejections may be applied to the claims now pending in this application, they are respectfully traversed.

MPEP 2142 reads in part:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the

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claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

As noted above in the discussion of the rejection under 35 U.S.C. 102(b), Murai does not teach or suggest a contact plug, disposed on the second insulating layer and the passivation layer and contacted with the inner landing pad, electrically connecting with the inner landing pad, as recited in claim 23. Furthermore, Applicant respectfully submits that neither Wu et al nor Yeh teach or reasonably suggest these features.

In addition, as noted on page 9, lines 16-26 of the application, providing a contact plug disposed on the second insulating layer and the passivation layer and contacted with the inner landing pad, electrically connecting with the inner landing pad, enhances the process window of the contact hole. Applicant submits that there is no suggestion or motivation in the prior art references to modify or combine the cited references to obtain the claimed feature.

It is therefore Applicant's belief that even when taken in combination, the prior art references relied upon by the Examiner do not teach or suggest all the limitations of claims 24-25. Furthermore, there is no suggestion or motivation in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the references or to combine reference teachings.

For at least these reasons, Applicant submits that a *prima facie* case of obviousness cannot be established in connection with these claims. Allowance of claims 24-25 is respectfully requested.

#### New Claim 27

New claim 27 has been added including all the limitations of claims 23 and 26. Namely, claim 27 recites a structure for a bit line contact hole comprising a passivation layer, disposed on the inner landing pad, the transistor, and the substrate, wherein the passivation layer has a thickness of about 110~130Å.

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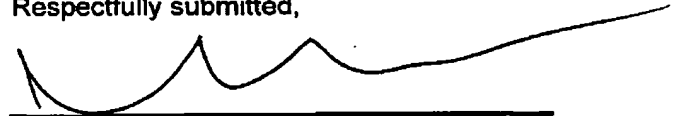
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Applicant submits that new claim 27 is allowable for at least the reasons described in connection with claim 23. Applicant further submits that the prior art cited by the Examiner fails to teach a structure for a bit line contact hole comprising a passivation layer, disposed on the inner landing pad, the transistor, and the substrate, wherein the passivation layer has a thickness of about 110~130Å. Allowance of claim 27 is respectfully requested.

Conclusion

The Applicant believes that the application is now in condition for allowance and respectfully requests so.

Respectfully submitted,



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